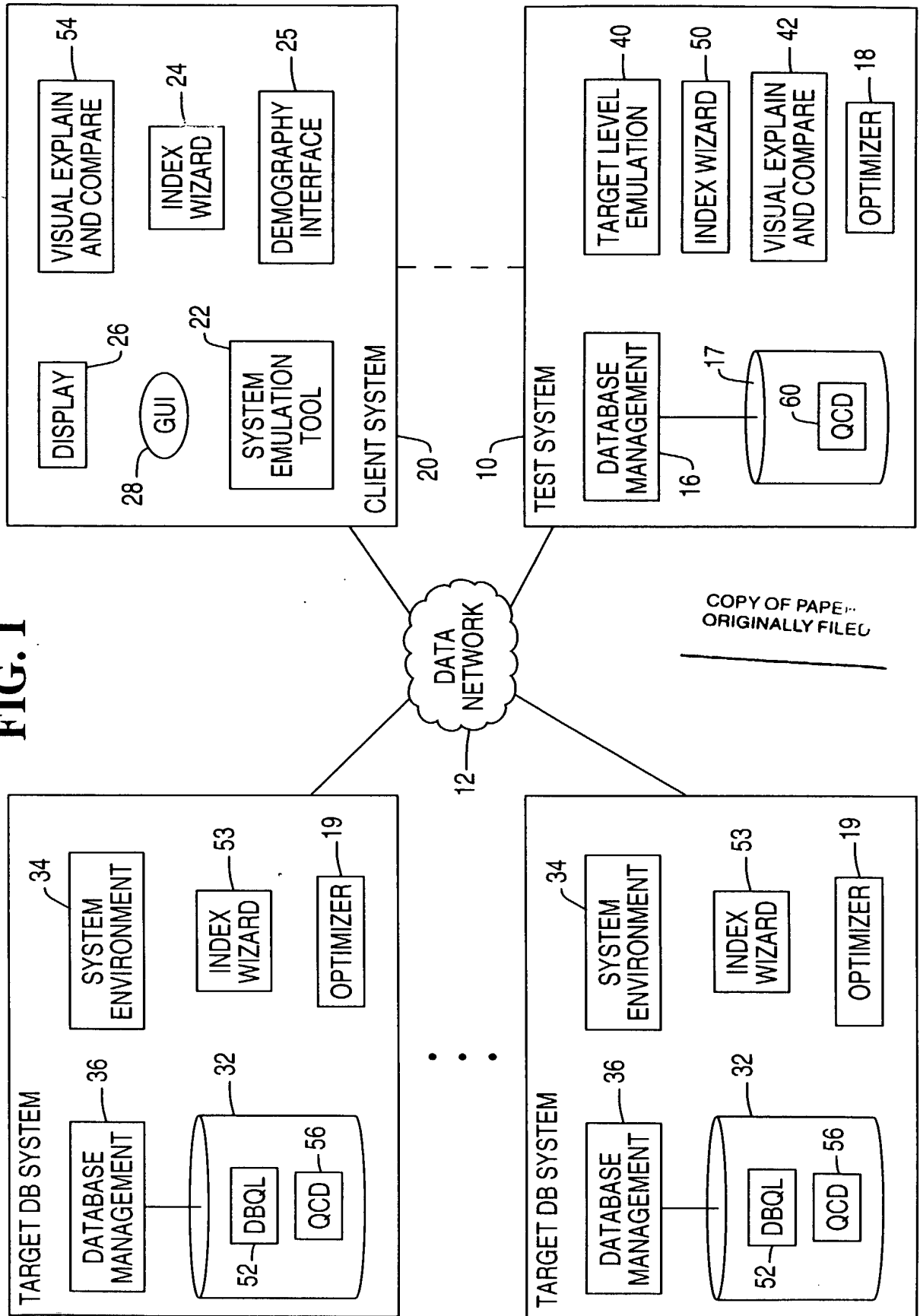


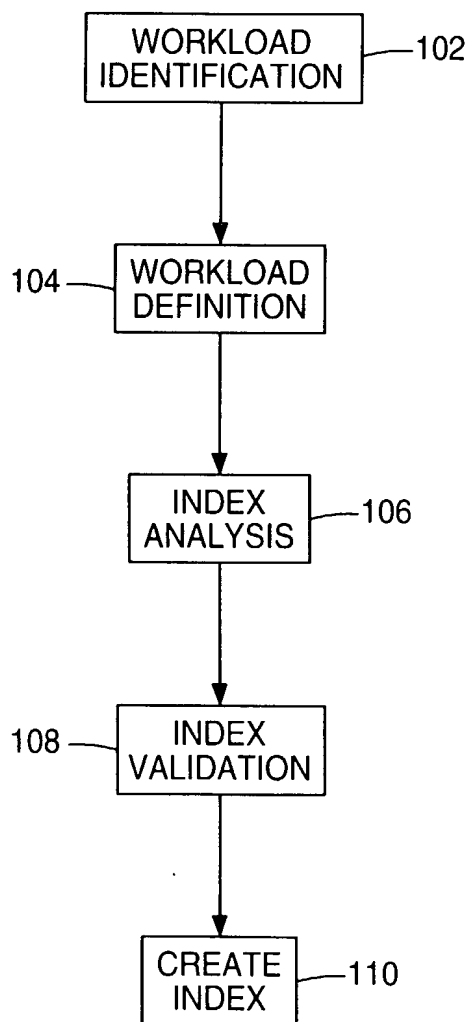
**FIG. 1**



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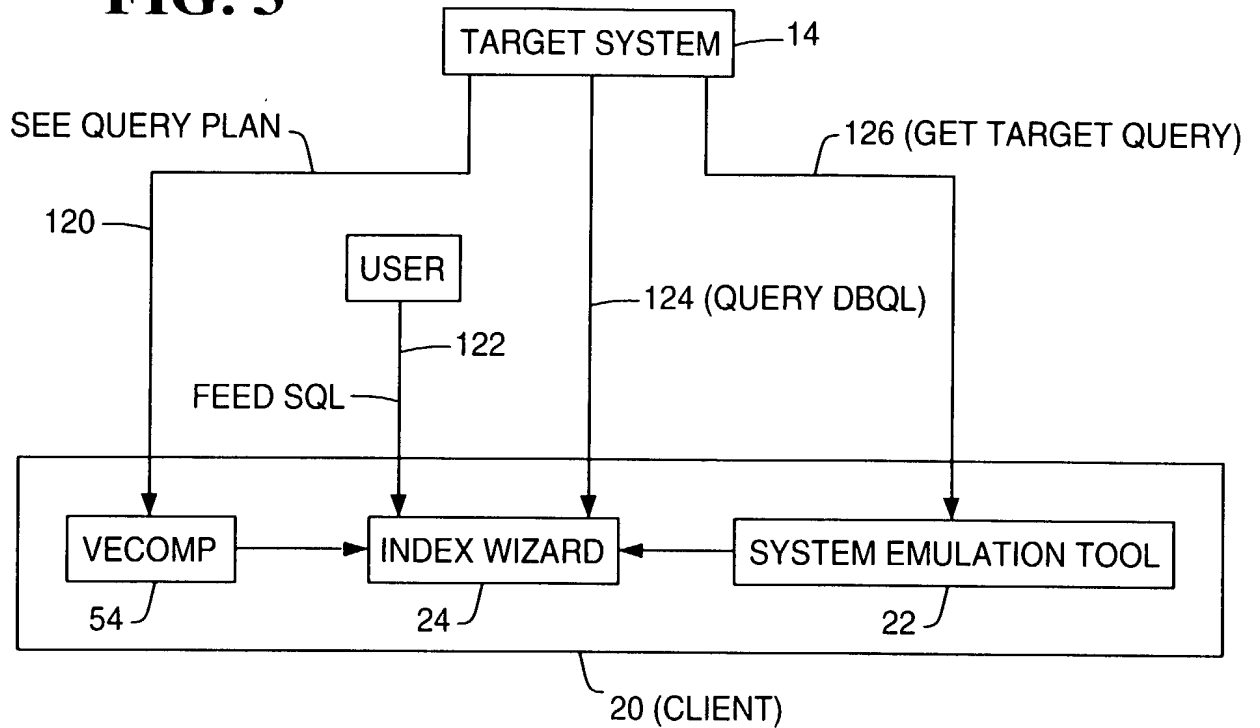
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**FIG. 2**

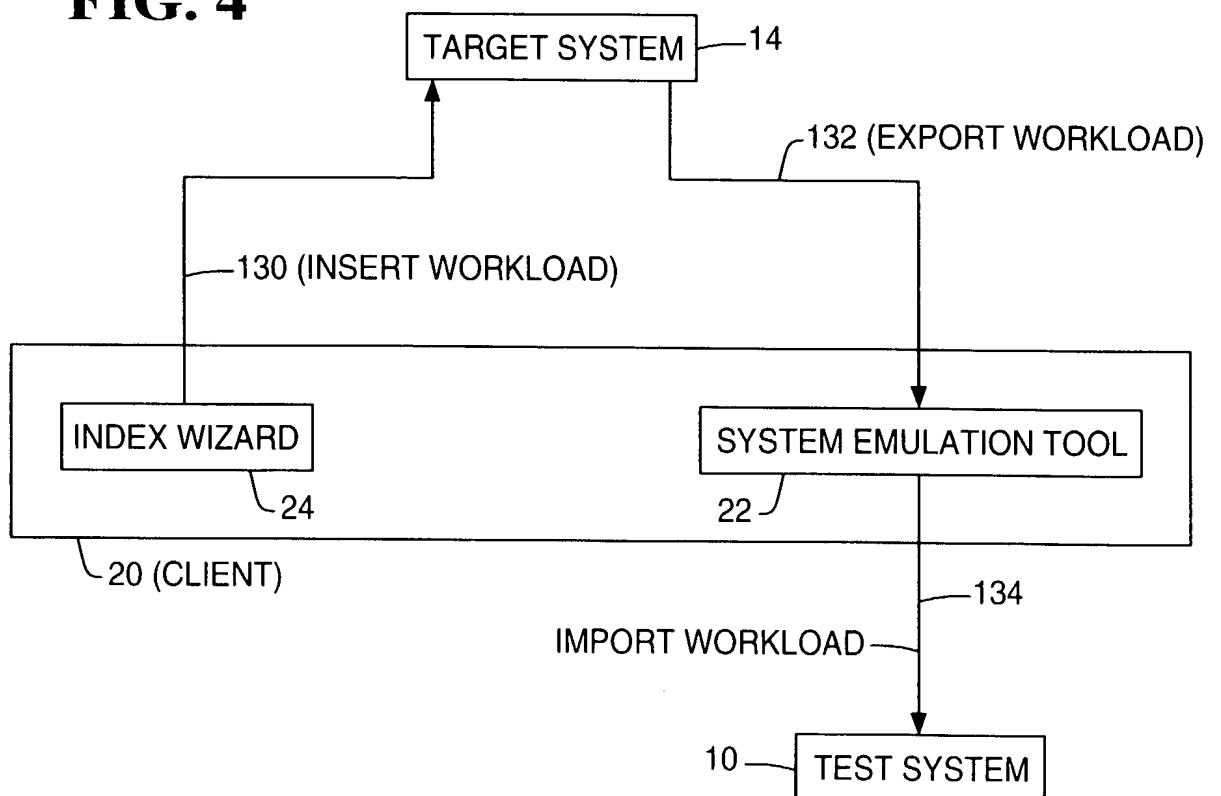


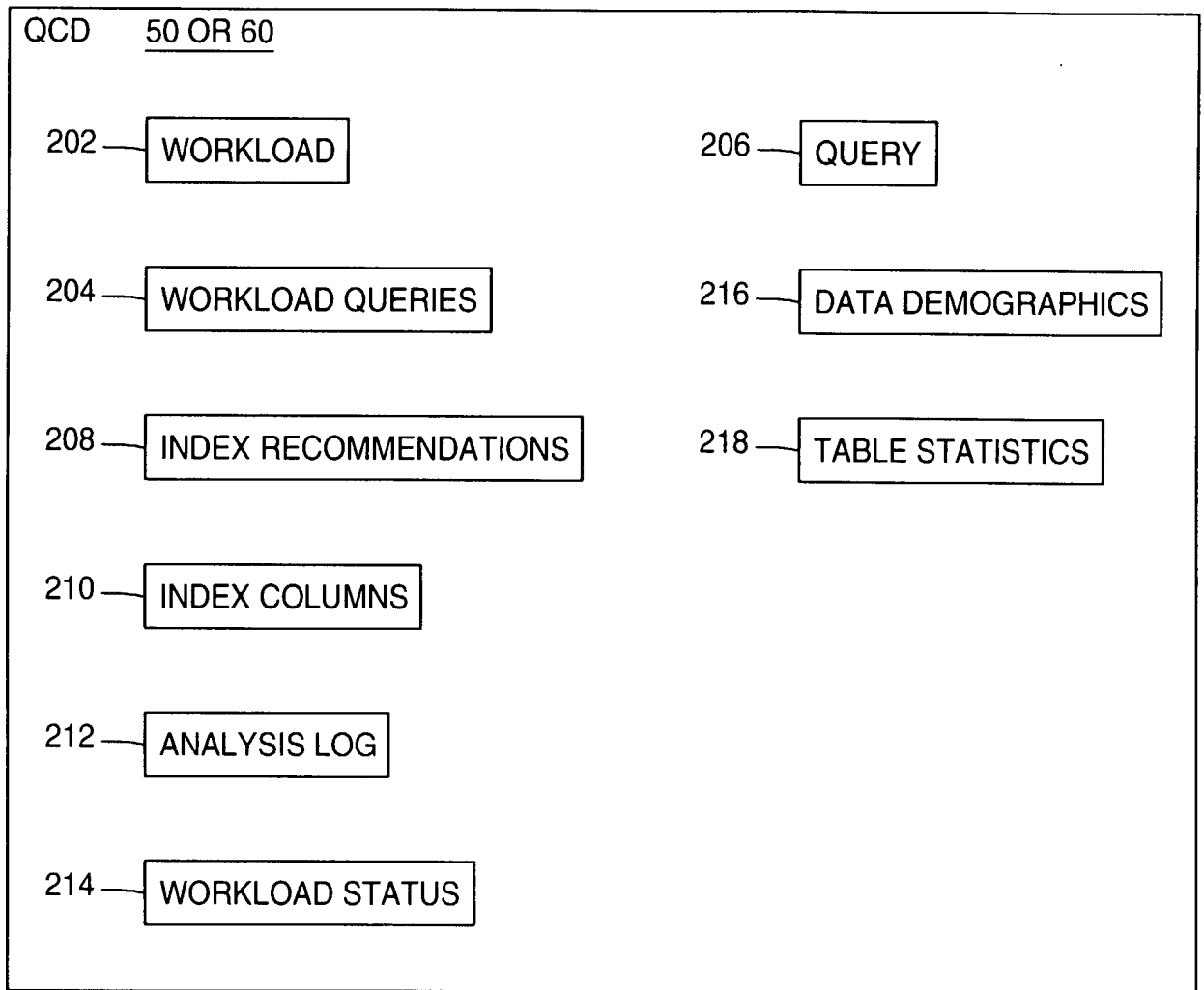
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**FIG. 3**



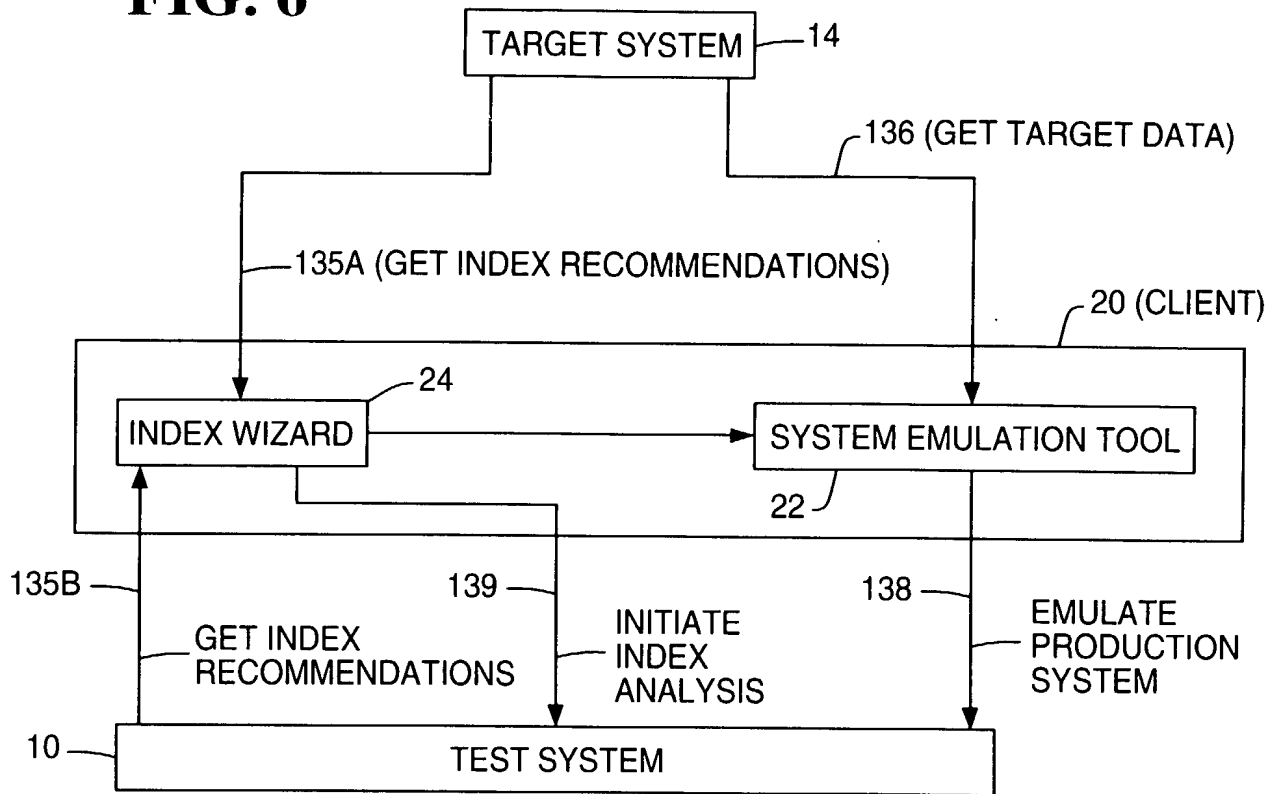
**FIG. 4**



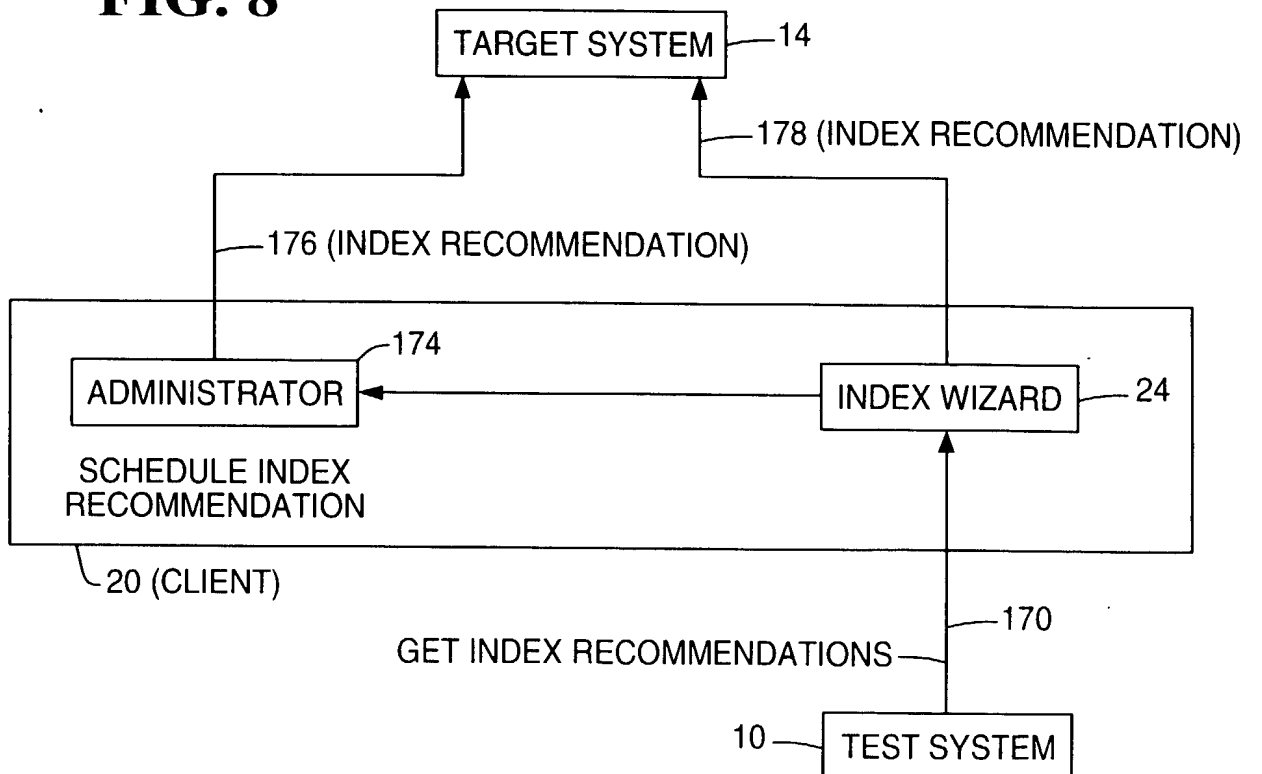
COPY OF PAPER  
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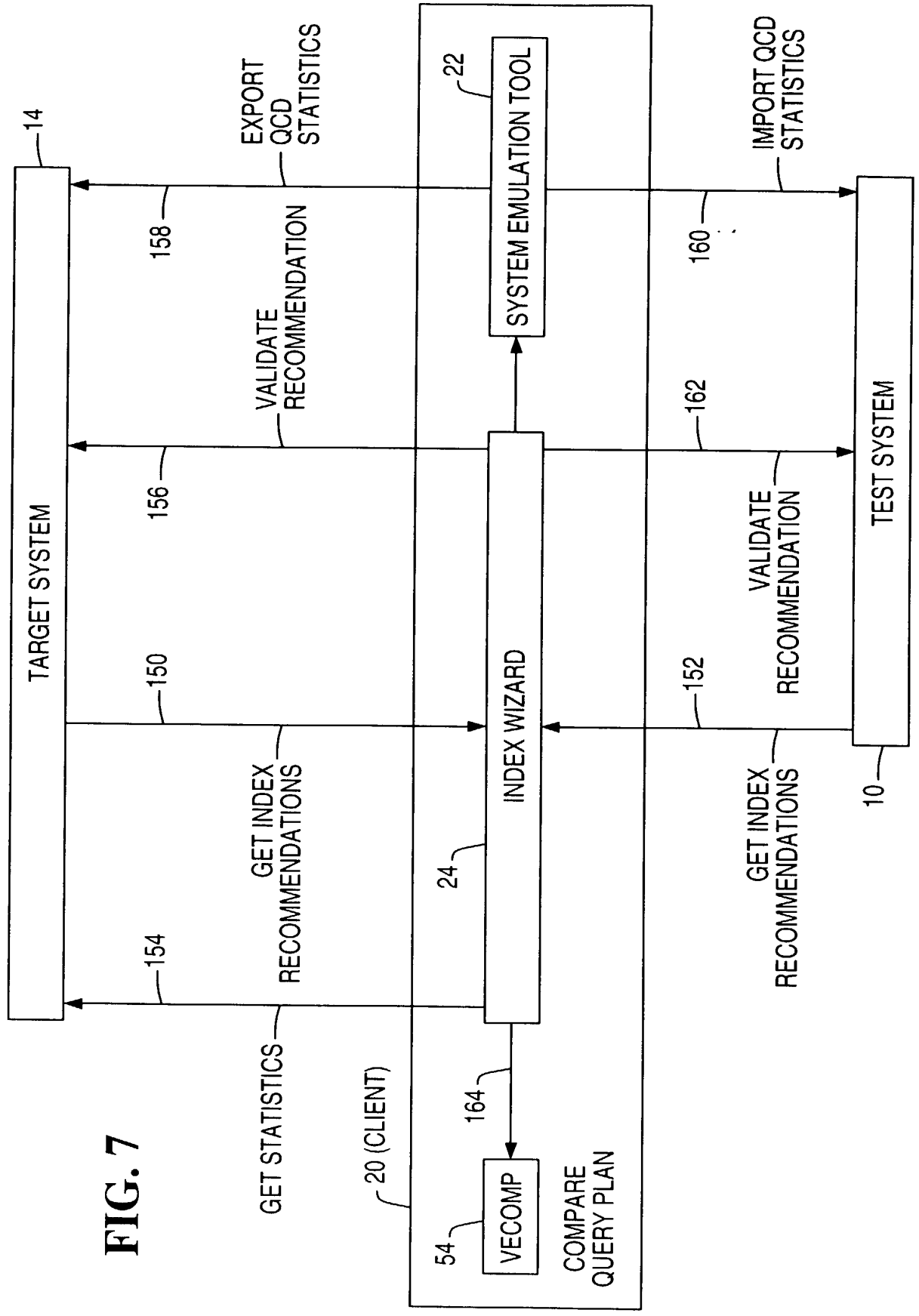
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**FIG. 6**

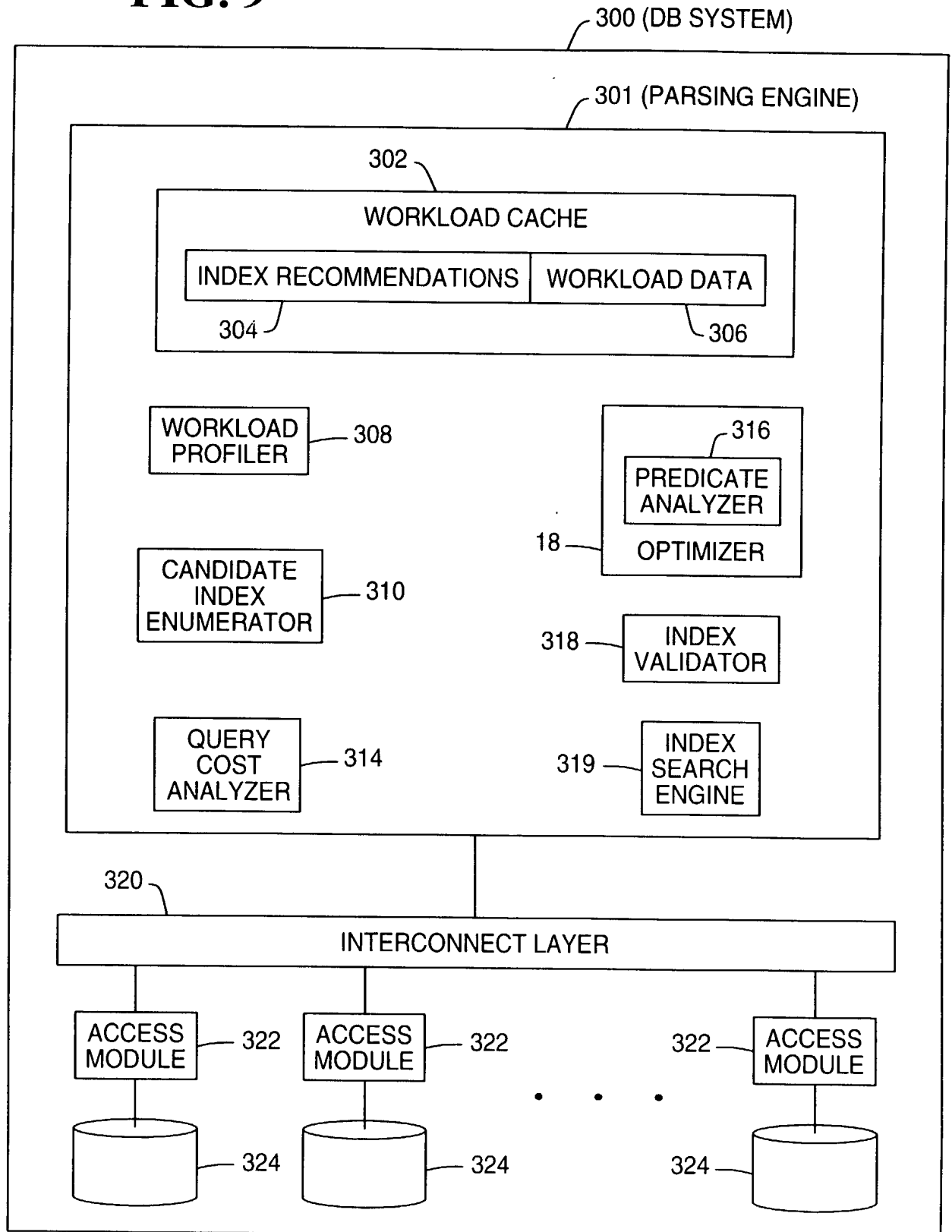


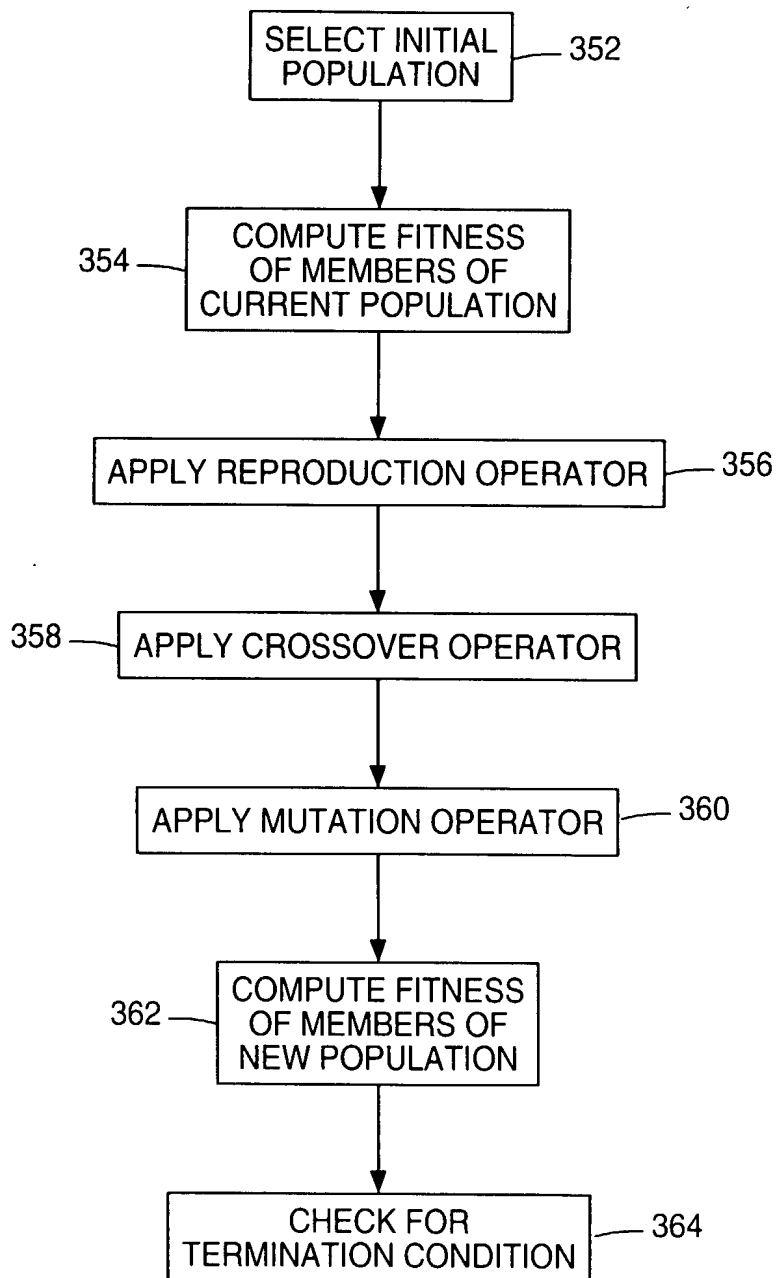
**FIG. 8**



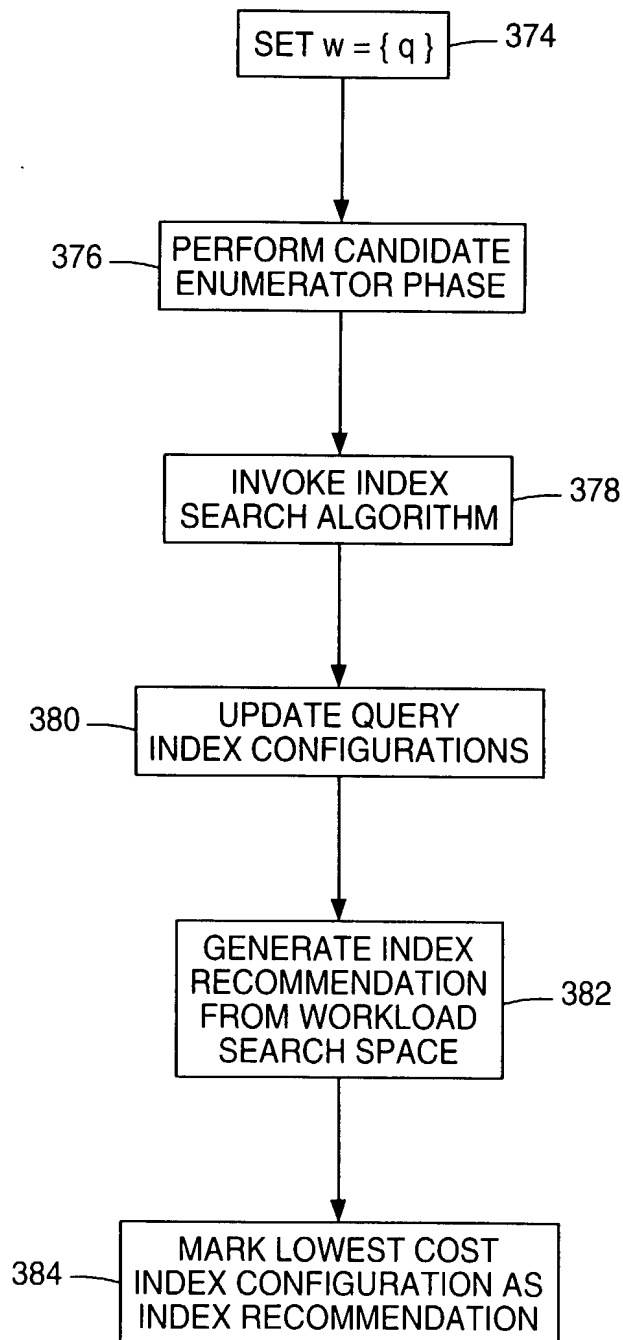


**FIG. 9**



**FIG. 10**



COPY OF PAPER  
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400

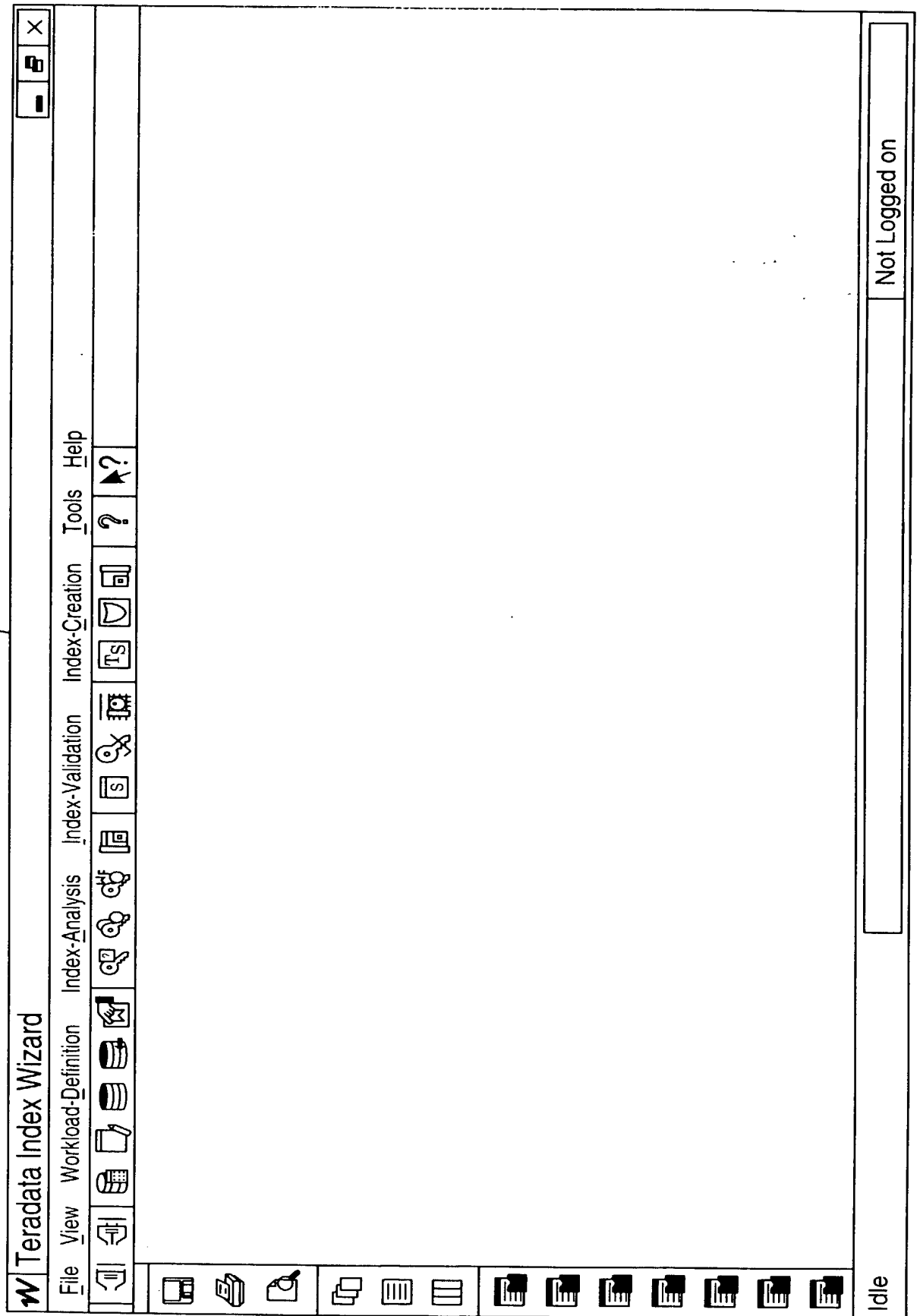
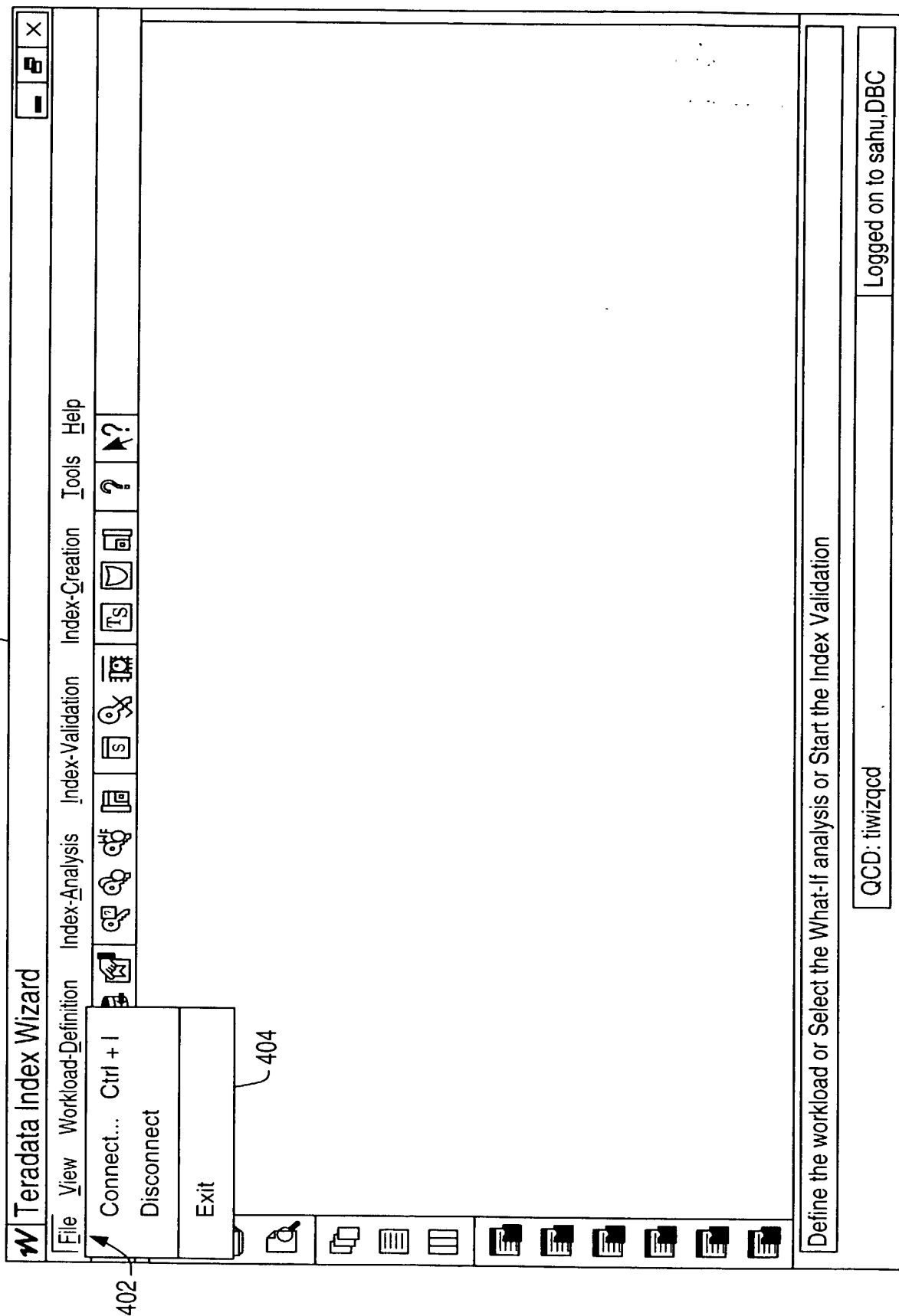


FIG. 13

400

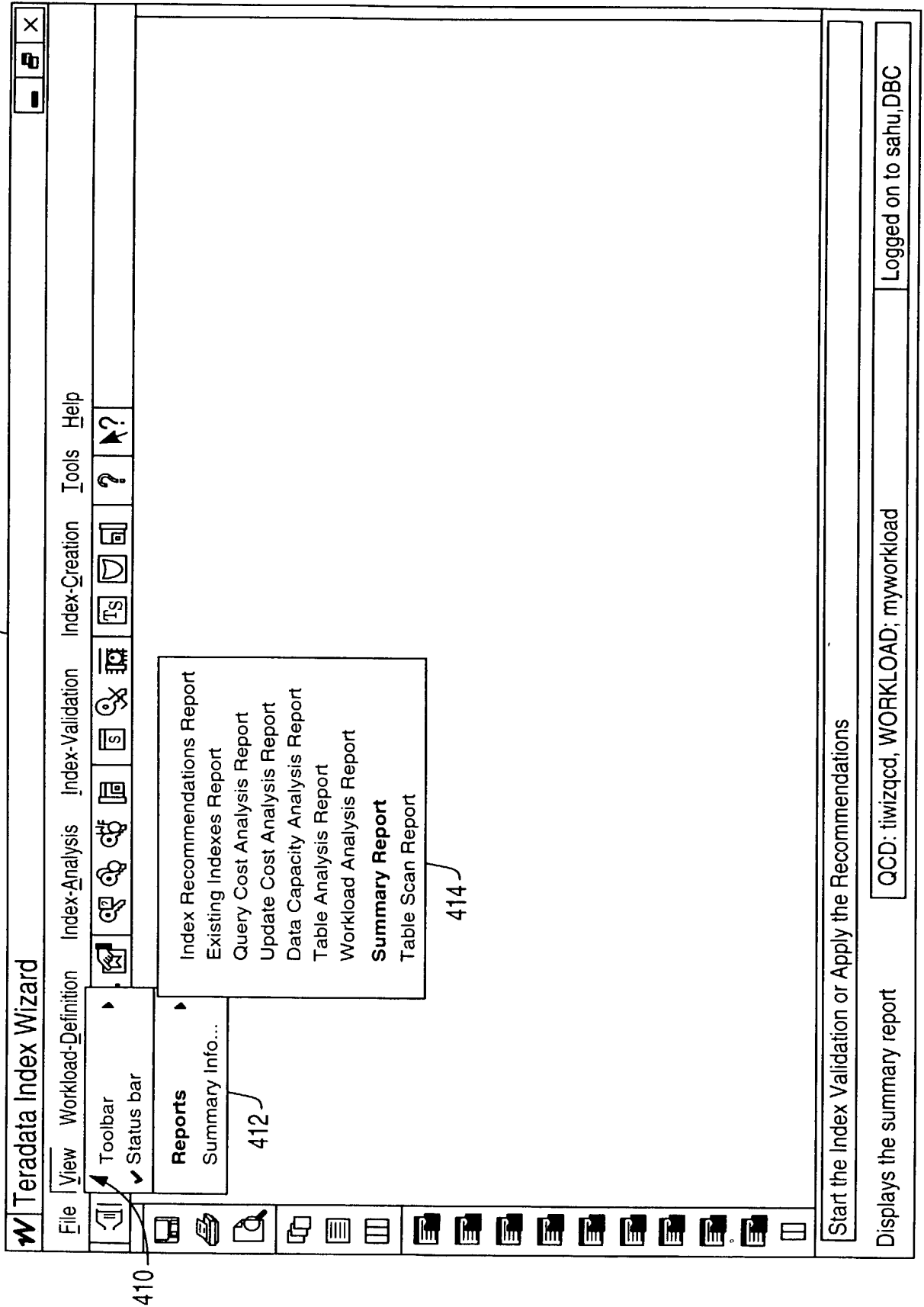


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# FIG. 14

400



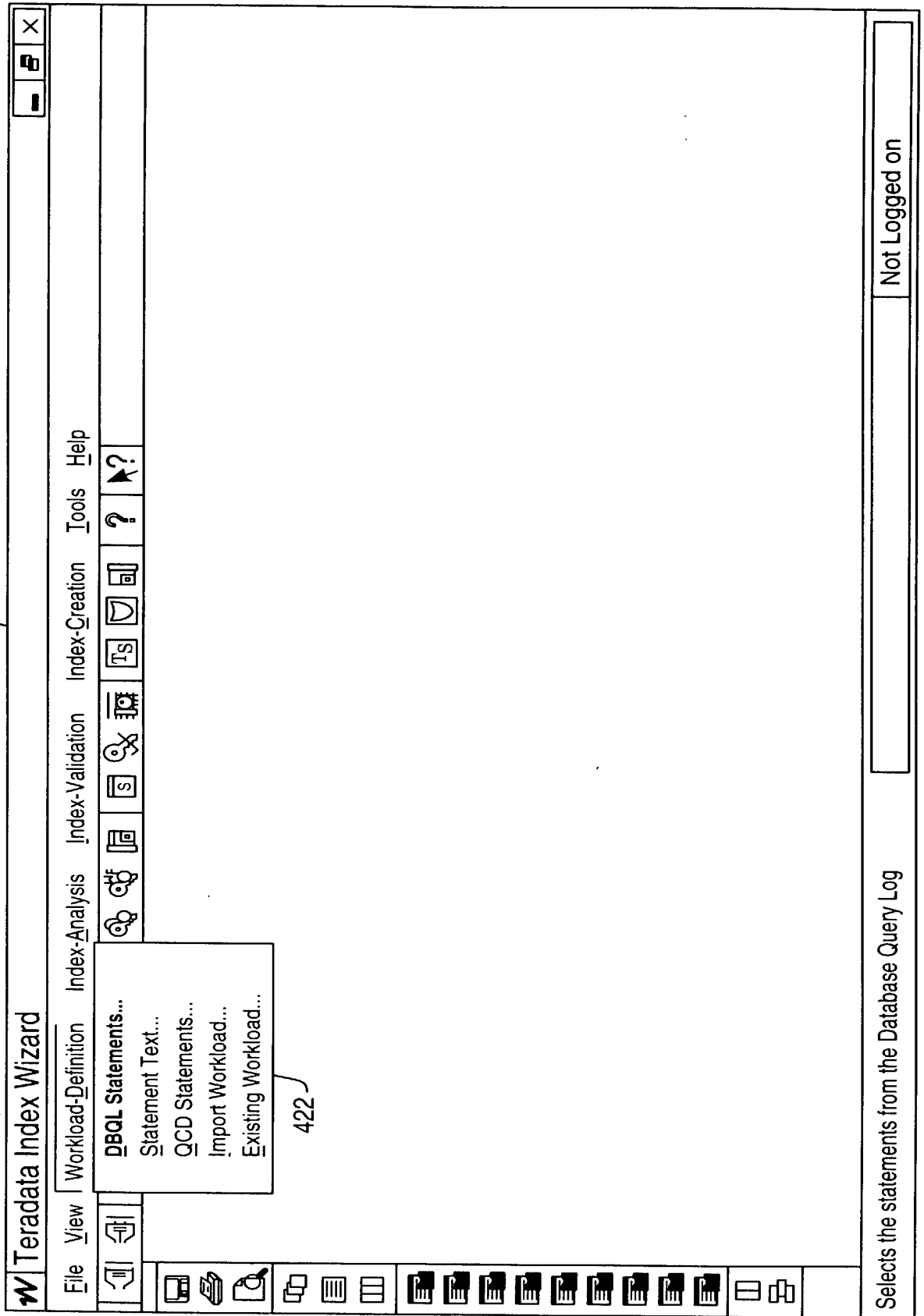
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FIG. 15

400

420



422

FIG. 16

430

400

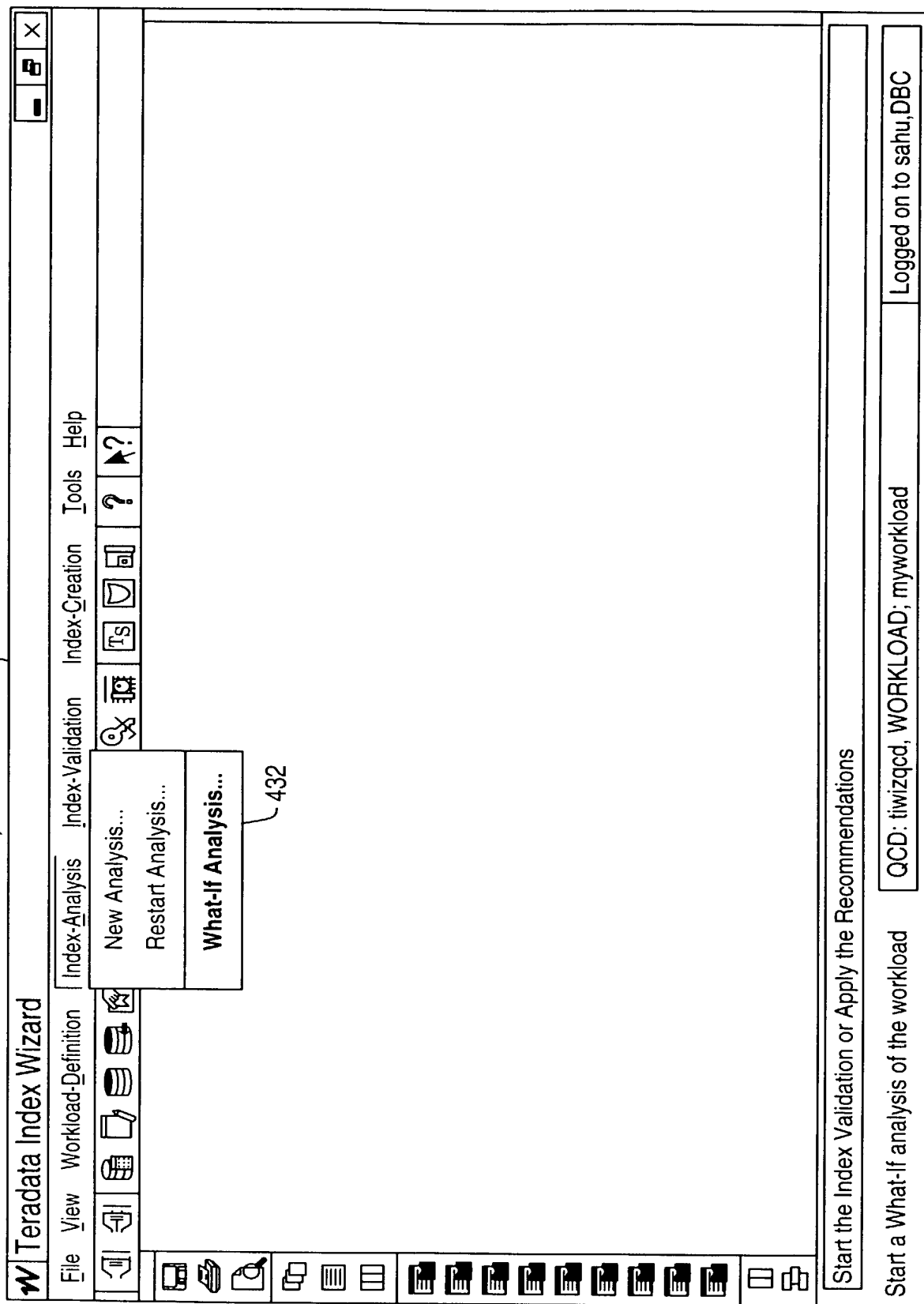
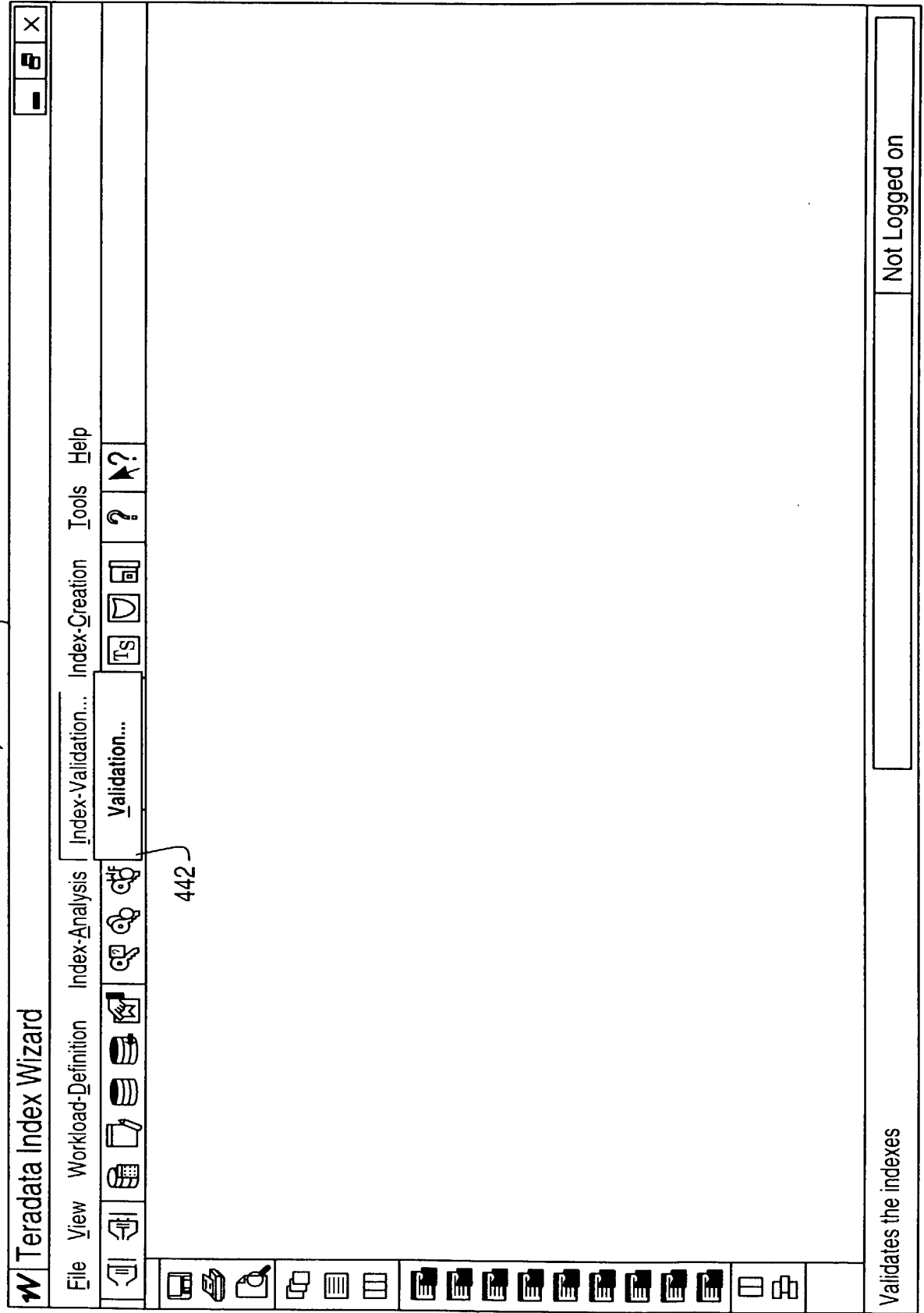


FIG. 17

440 400

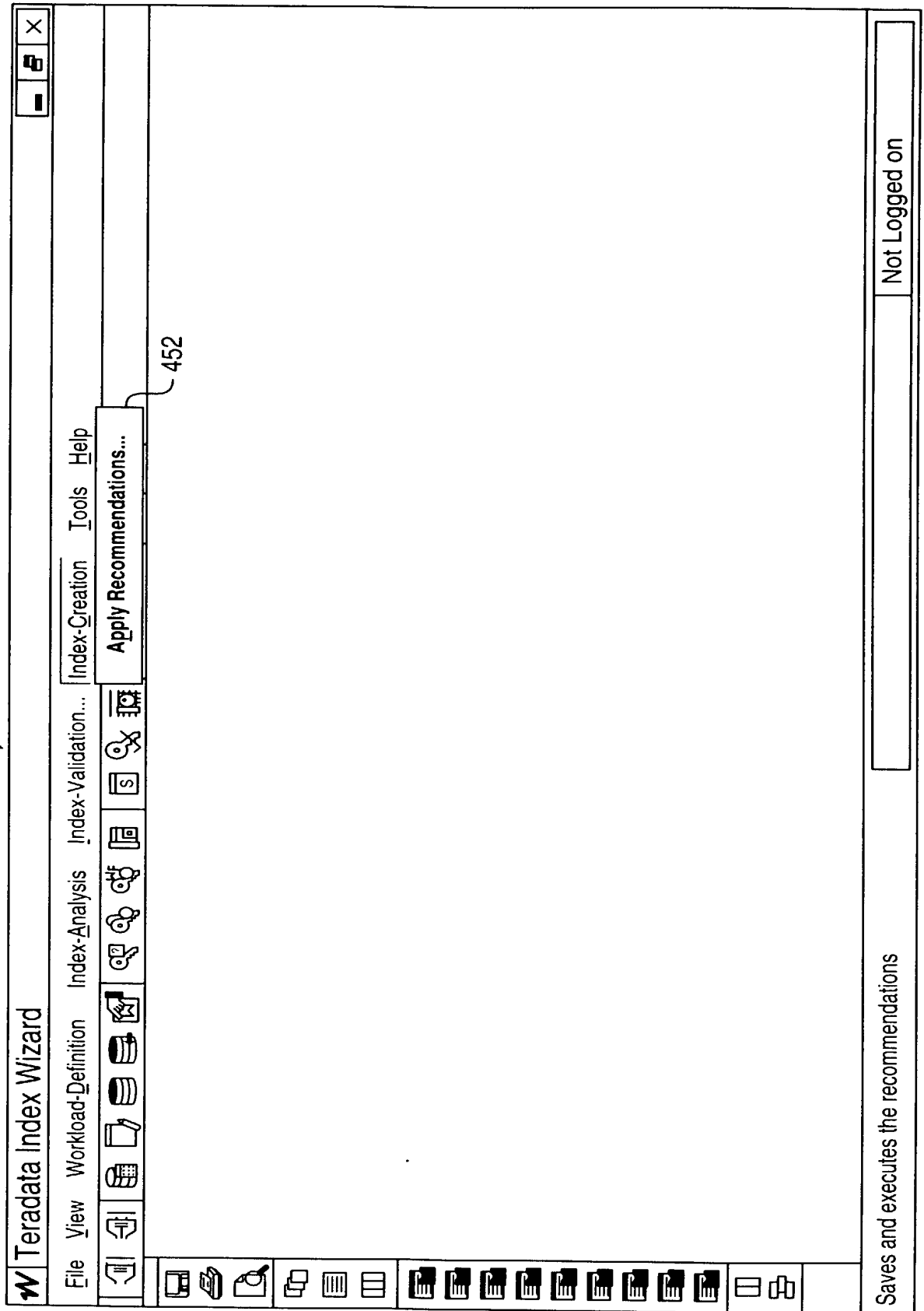


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FIG. 18

450

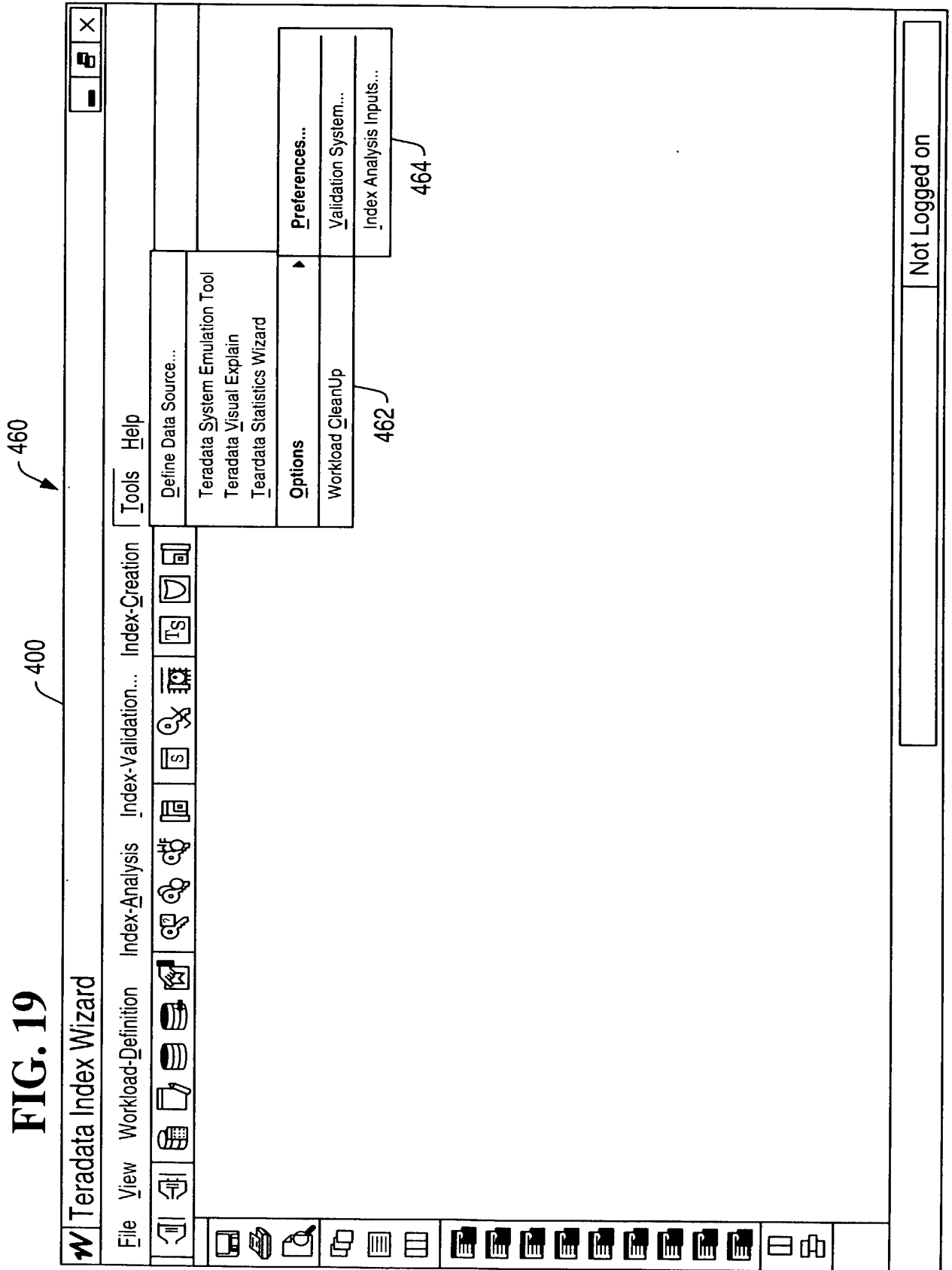


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




# FIG. 19



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**FIG. 20**

	ICON	DESCRIPTION
800		TO LOGON TO THE TERADATA RDBMS SERVER
801		TO LOG OFF FROM THE TERADATA RDBMS SERVER
802		TO SELECT THE STATEMENTS FROM THE DBQL
803		TO ENTER THE SQL STATEMENTS OR SELECT THEM FROM MORE THAN ONE FILE
804		TO SELECT THE SQL STATEMENTS FROM THE QCD
805		TO IMPORT A WORKLOAD FROM A PRODUCTION SYSTEM
806		TO SELECT AN EXISTING WORKLOAD
807		TO SET/RESET THE INDEX ANALYSIS PARAMETERS
808		TO START INDEX ANALYSIS
809		<u>TO PERFORM "WHAT-IF" ANALYSIS</u>
810		<u>TO RESTART INDEX ANALYSIS FROM A CHECKPOINT</u>
811		TO DISPLAY SUMMARY INFORMATION
812		TO VALIDATE THE INDEXES
813		TO SCHEDULE THE CREATION OF INDEXES
814		TO VIEW THE HELP CONTENTS
815		TO GUIDE THE USER HOW TO USE HELP

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**FIG. 21**

500

Define Workload

? X

DBQL Search Criteria

User Name:   
 Start Time:   
 Row Count:

Account Name:   
 End Time:   
 I/O Count:

Frequency:

Statement Text:  

Browse DBQL

DBQL Statements

Selected

Frequency

Statement Text

◀

▶

Workload Name:

503

502

-510

SQL Statements	
<div style="border: 1px solid black; padding: 5px;">sel * from dbc.dbcinfoTbl;</div>	
<div>◀ ◻ ▶</div>	<div>▲ ◻ ◻ ▼</div>
Frequency:	<input type="text" value="1"/> <span style="margin-left: 20px;">Add</span> <span style="margin-left: 20px;">Browse</span>
Selected Statements	
Workload Name: <input type="text" value="MyWorkload"/>	
Frequency	Statement Text
1	sel * from dbc.dbcinfoTbl;
<div> </div>	
<div>◀ ◻ ▶</div>	
<div>Remove</div>	
OK	
Cancel	

*Note: In the original image, callout 512 points to the frequency input field, 513 points to the Add button, and 514 points to the Statement Text column header.*

- 520

Define Workload

QCD Statements

QCD Name: TIWizQCD

Query Id:

Query Tag:

524

522

Browse QCD

Sele	Query	Frequ	Statement Text
<input checked="" type="checkbox"/>	19	1	Insert explain into tiwizqcd sel * from query,rela
<input checked="" type="checkbox"/>	17	1	Insert explain into tiwizqcd sel * from query;;;
<input type="checkbox"/>	15	1	sel * from query,relation where query.queryid =
<input checked="" type="checkbox"/>	13	1	sel * from query,relation ,workload;;;
<input type="checkbox"/>	32	1	sel * from query,relation where relation.relation
<input checked="" type="checkbox"/>	11	1	sel * from query,relation where query.queryid =
<input checked="" type="checkbox"/>	9	1	sel * from query,relation ,workload where quer
<input type="checkbox"/>	30	1	sel * from query;;;
<input type="checkbox"/>	28	1	Insert explain into TIWizQCD sel * from relatio

Workload Name: MyWorkload

Select All

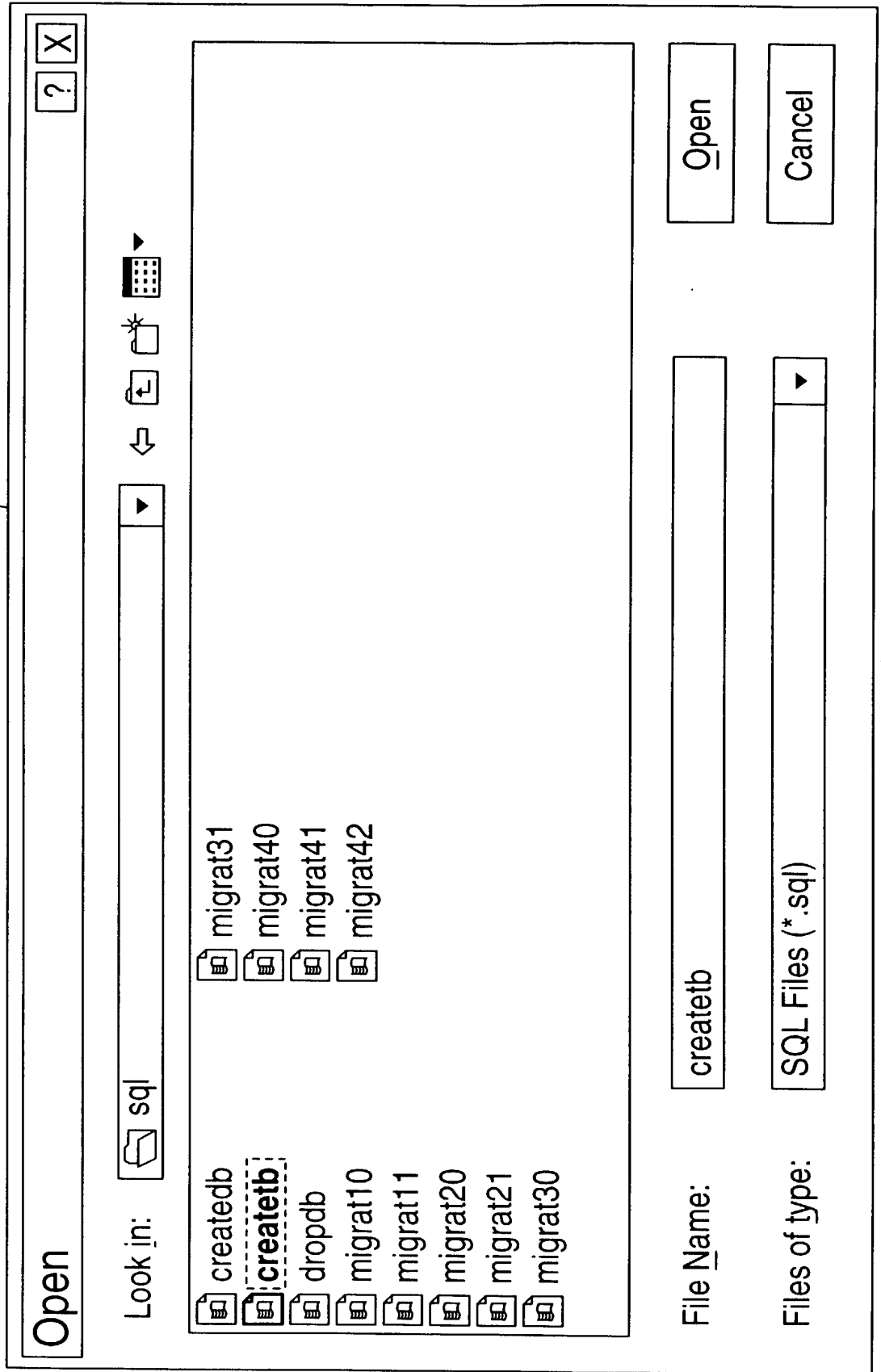
Deselect All

OK

Cancel

FIG. 24

530



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FIG. 25

540

Define Workload ? X

Select SQL Statements

542

Selected	Frequency	Statement Text
<input checked="" type="checkbox"/>	1	<b>SELECT DISTINCT t_2.t_2_c_2- t_</b>
<input type="checkbox"/>	1	<b>SELECT NULLIF ( t_4.t_4_c_3</b>
<input checked="" type="checkbox"/>	1	<b>DELETE FROM t_4 WHERE NO</b>
<input checked="" type="checkbox"/>	1	<b>DELETE t_1 WHERE NULLIF ( t_1</b>
<input type="checkbox"/>	1	<b>INSERT INTO t_2 ( t_2.t_2_c_1 , t_2.</b>
<input checked="" type="checkbox"/>	1	<b>UPDATE t_1 FROM t_5, t_2, t_3 SET</b>

◀ ▶

Workload Name:

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**FIG. 26**

550

Existing Workload
?
X

**Workload Statements**

QCD Name:

TIWizQCD

...

Workload Name:

MyWorkload

▼

State	Frequ	Statement Text	▲
1	1	sel * from query;;	
2	1	sel * from relation;;	▼

◀
▶

**Workload Status**

Recommend	Index Tag	Validate Sy	Validate Ti	Validate Q	Recom	▲
2	myindextag	deepika	7:43.670000	tiwizqcd	NONE	
1	MyIndexT ac	deepika	7:43.670000	tiwizqcd	NONE	
2	myindextag	deepika	7:43.670000	tiwizqcd	NONE	▼

◀
▶

**Modify Options**

☐ Qcd Statements

☐ Query Text

Modify

OK

Cancel



Existing Workload

?

X

Workload Statements

QCD Name:

TIWizQCD

...

Workload Name:

MyWorkload

▼

Selec	State	Frequ	Statement Text
<input checked="" type="checkbox"/>	1	1	sel * from query;;
<input type="checkbox"/>	2	1	sel * from relation;;

Workload Status

Recommend	Index Tag	Validate Sy	Validate Ti	Validate Q	Recom
2	myindextag	deepika	7:43.670000	tiwizqcd	NONE
1	MyIndexT ac	deepika	7:43.670000	tiwizqcd	NONE
2	myindextag	deepika	7:43.670000	tiwizqcd	NONE

Modify Options

☐ Qcd Statements
   
☐ Query Text

New Workload Name:

Update

OK

Cancel

FIG. 27

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**FIG. 28**

560

Index Analysis Parameters

Index Analysis Inputs

☒ Keep existing indexes

Maximum Columns per Index: 4

Maximum Indexes per Table: 16

Index Search Space: 256

Change Rate Threshold: 5

OK Set Defaults Cancel

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**FIG. 29**

570

**Index Analysis**
? X

Workload Statements 572

Statement Id	Frequency	Statement Text	
3	1	sel * from query,relation where relation.relationid	▲
1	1	sel * from query;;	
2	1	sel * from relation;;	▼
◀ ▶			

Select Tables

Selected	Database Name	Table Name	Access
<input checked="" type="checkbox"/>	tiwizqcd	QUERY	3
<input checked="" type="checkbox"/>	tiwizqcd	RELATION	2
◀ ▶			

574

Select All
Deselect All

Restart Parameters

Index Tag: MyIndexTag      Checkpoint Frequency:

Save Options

☐ Save Recommendations in Files     
 ☐ Save Execution Plans in Files

OK
Cancel

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**FIG. 30**

580

**Restart Index Analysis** [?] [X]

Restart parameters

QCD Name: TIWizQCD

Workload Name: MyWorkload ▼

Index Tag: MyIndexTag ▼

Save option

☒ Save Recommendations

☐ Save execution plans

OK Cancel

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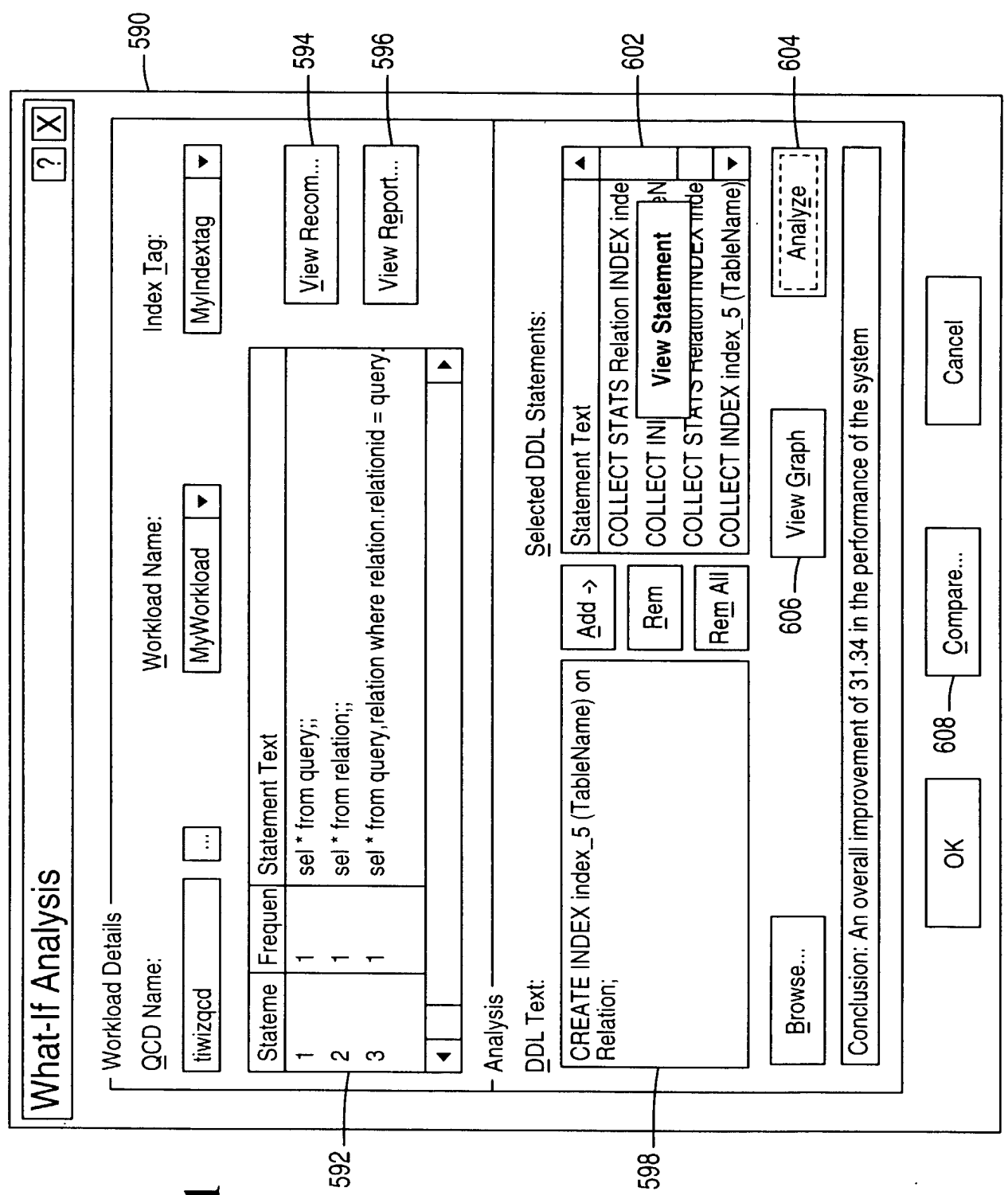


FIG. 31

# FIG. 32

620

Index Recommendation Report						
QCD Name: tiwizqcd		Workload Name: myworkload		Index Tag: myindextag		
Table Name	Index Tag	Index T...	Size(KB)	Time Esti...	Index DDL	Stats DDL
QUERY	MyIndextag	USI	10.00	59.00	CREATE INDEX...	COLLECT STATS
RELATION	MyIndextag	USI	10.00	59.00	CREATE INDEX...	COLLECT STATS
RELATION	MyIndextag	USI	10.00	59.00	CREATE INDEX...	COLLECT STATS

622

FIG. 33

630

Existing Indexes Report				Existing Indexes Report		QCD Name: TIWizQCD		Workload Name: myworkload		Index Tag: MyIndexTag	
Table Name				Index Name		Index Type		Columns			
QUERY				PK_QueryID		P		QueryID			
RELATION				PK_RelationKey		P		RelationKey			

632

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# FIG. 34

640

Query Cost Analysis Report

Query Cost Analysis Report

QCD Name: TIWizQCD

Workload Name: myworkload

Index Tag: MyIndexTag

Query Type	Cost(with existing i...	Cost(with recommended...	Percentage Cha...	Query Text...
SELECT	100.00	50.00	100.00	sel * from query,relation w
SELECT	100.00	50.00	100.00	sel * from query;;
SELECT	100.00	50.00	100.00	sel * from relation;;

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FIG. 35

650

W Update Cost Report

Update Cost Report

QCD Name: MyTextQCD      Workload Name: MyWorkload      Index Tag: Index1

Table Name	Indexes	Update Cost
No rows returned		

652

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# FIG. 36

660

Disk Space Analysis Report

QCD Name: TIWizQCD

Workload Name: myworkload

Index Tag: MyIndexTag

Disk Space Analysis Report

Table Name	Index Name	Size(KB)
QUERY	MyIndextag	10.00
RELATION	MyIndextag	10.00
RELATION	MyIndextag	10.00

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662

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FIG. 37

670

Table Usage Report	
Table Usage Report	
QCD Name: TIWizQCD	Workload Name: myworkload
	Index Tag: MyIndexTag
Table Name	Access Count
QUERY	1
RELATION	1
QUERY	1
RELATION	1
Statement Text	
QUERY	sel * from query,relation where relationid = query.queryid and query.qu
RELATION	sel * from query,relation where relationid = query.queryid and query.qu
QUERY	sel * from query;;
RELATION	sel * from relation;;

672

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089

682

# FIG. 39

690

Summary Report

Summary Report

QCD Name: TIWizQCD

Workload Name: myworkload

Index Tag: MyIndexTag

Table Name	Index Name	Index DDL	Stats DDL
QUERY	MyIndextag	CREATE INDEX index_3 (QueryText) on Query;	COLLECT STATS Query IND
RELATION	MyIndextag	CREATE INDEX index_4 (name) on Relation;	COLLECT STATS Relation I
RELATION	MyIndextag	CREATE INDEX index_4 (name,TableName) o...	COLLECT STATS Relation I

692

# FIG. 40

700

Table Scan Report					
QCD Name: tiwizqcd			Workload Name: myworkload		
Owner	Table Name	Cardinality	AMPs Retrieves...	Geograph...	Statement Text
tiwizqcd	QUERY	45.00	All AMP Retrieve	built locally	sel * from query,relation where query.que
tiwizqcd	QUERY	45.00	All AMP Retrieve	built locally	sel * from query,relation,workload where
tiwizqcd	QUERY	45.00	All AMP Retrieve	built locally	sel * from query,relation,workload;;
tiwizqcd	RELATION	282.00	All AMP Retrieve	built locally	sel * from query,relation where query.que
tiwizqcd	RELATION	282.00	All AMP Retrieve	built locally	sel * from query,relation,workload where
tiwizqcd	RELATION	282.00	All AMP Retrieve	built locally	sel * from query,relation,workload;;
tiwizqcd	WORKLOAD	2.00	Single AMP Retr...	built locally	sel * from query,relation,workload where
tiwizqcd	WORKLOAD	2.00	All AMP Retrieve	built locally	sel * from query,relation,workload;;

702

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-710

Cancel

-730

-732

-740

742



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# FIG. 44

750

## Index Validation

Validate Indexes

Select indexes to be validated: 752 ☒ Validate on another system

Sele	Table	Index	Index	Columns	Index DDL
<input checked="" type="checkbox"/>	QUER	MyInd		Query Text	CREATE INDEX index_3 (Query T
<input checked="" type="checkbox"/>	RELA	MyInd		name	CREATE INDEX index_4 (name) o
<input checked="" type="checkbox"/>	RELA	MyInd		TableName	CREATE INDEX index_4 (name T

◀
▶

Select All

Deselect All

View DDL...

Validate

Validation Results

Table Name	Index Name	% Sample on which statistics were collected
QUERY		10
RELATION		10
RELATION		10

◀
▶

Conclusion: An overall improvement of 38.24 in the performance of the system

Compare Options: Compare on same system View Graph

OK

Compare...

Cancel

762

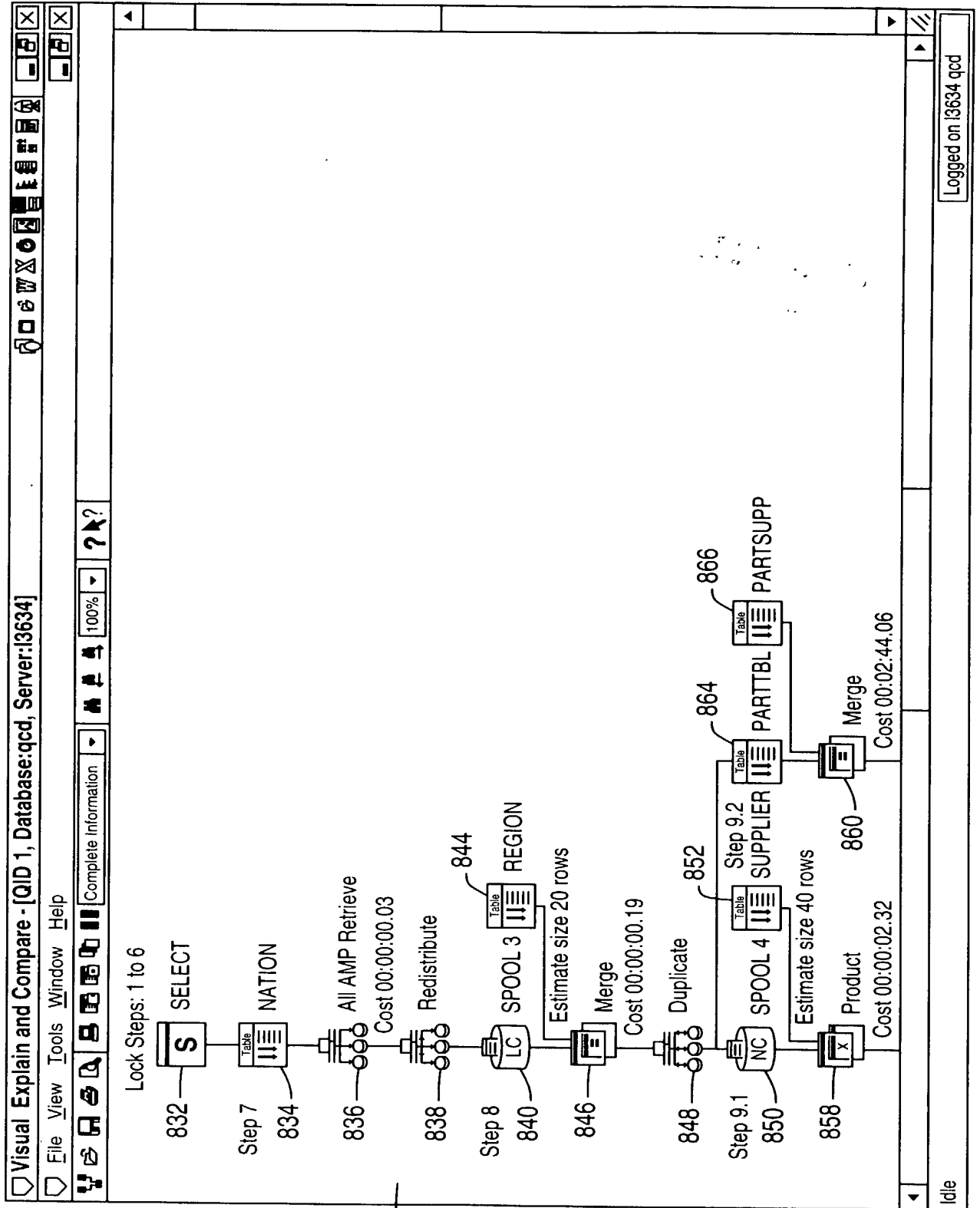


FIG. 45

830

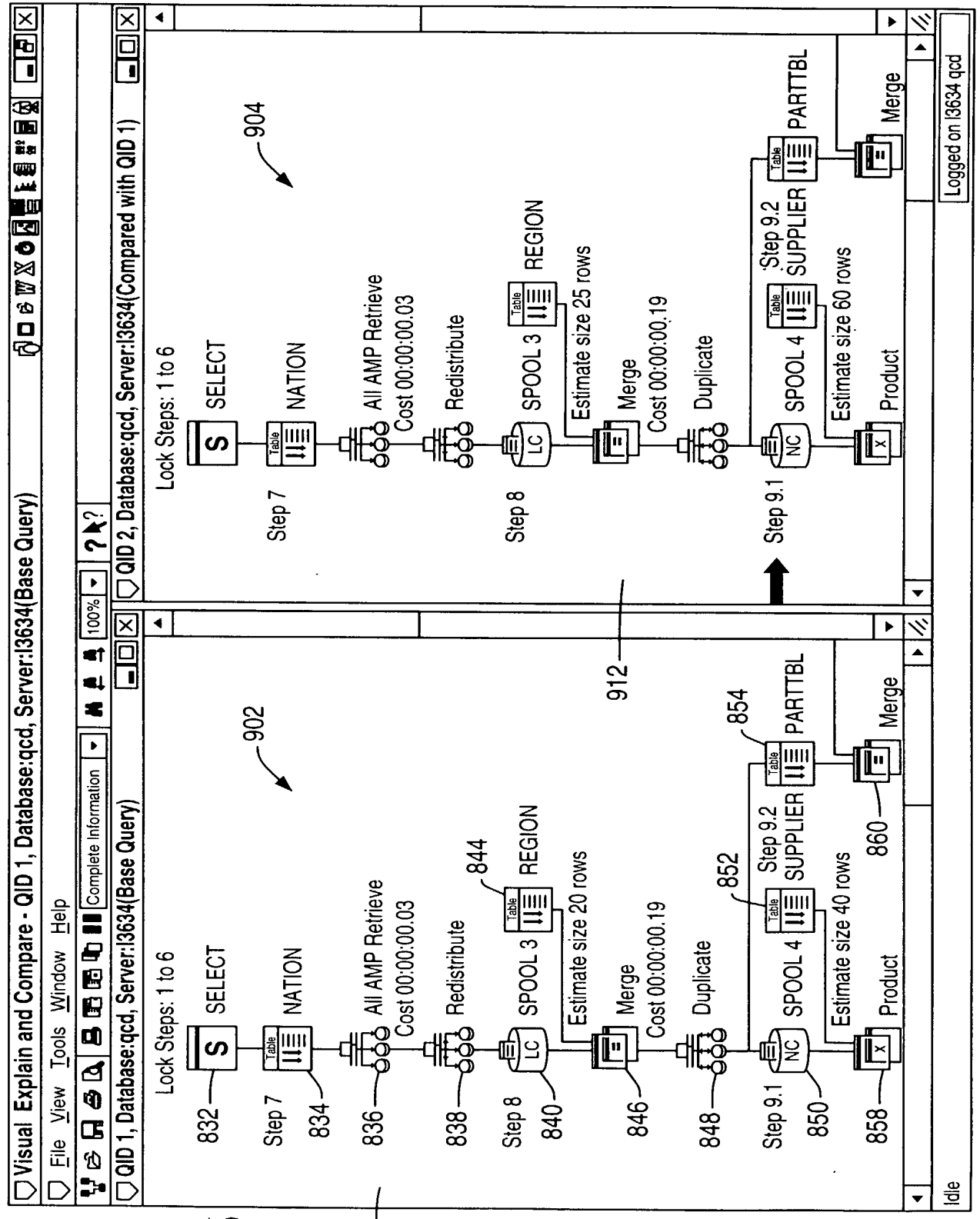


FIG. 46

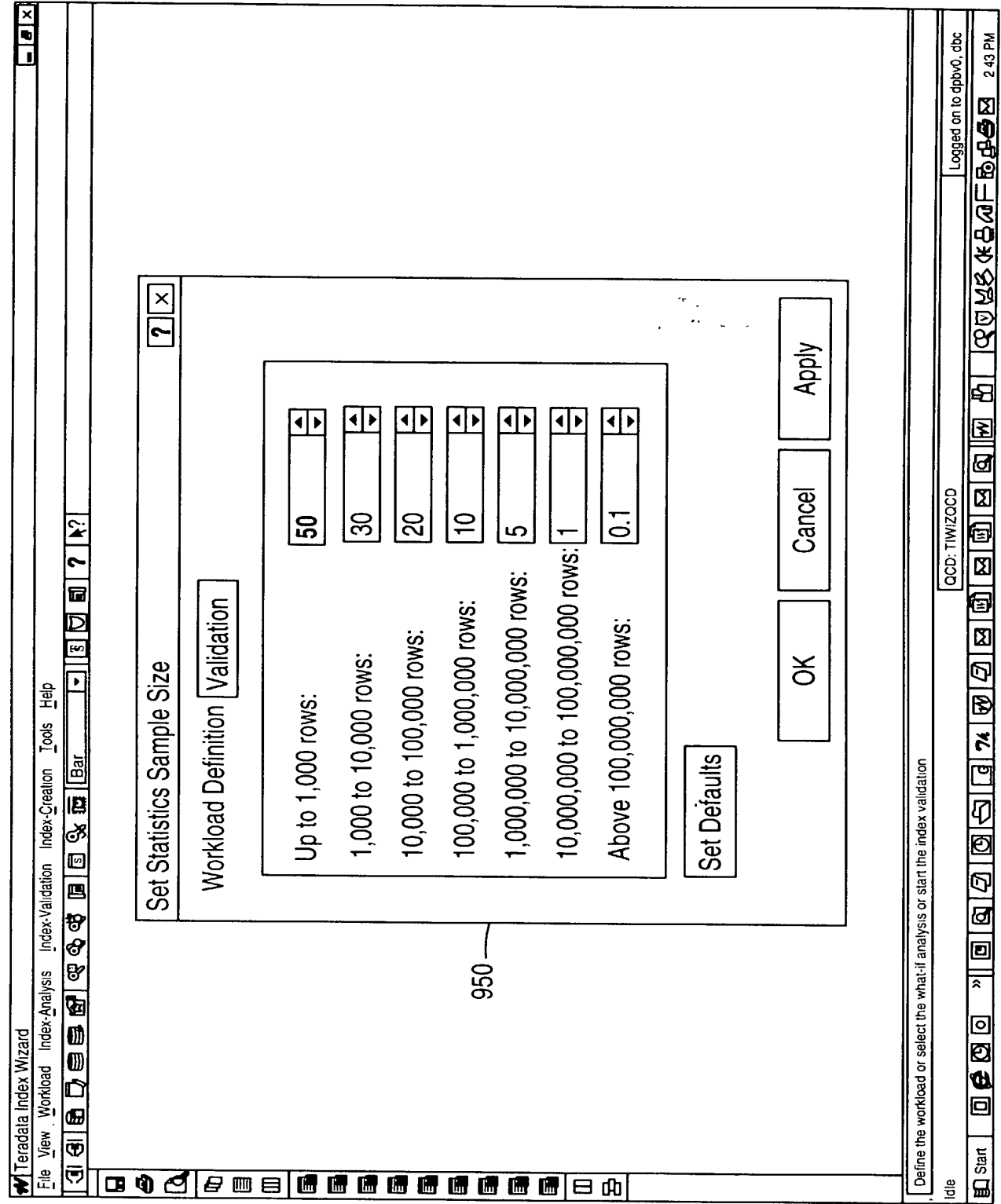


FIG. 47